

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A display device comprising a pixel matrix circuit constituted by a plurality of pixels each including at least one TFT and a pixel electrode connected to the TFT, wherein a contact portion for electrical connection to the TFT is disposed at a part of the pixel electrode, wherein an insulating layer is embedded in a recess portion provided at the contact portion, wherein the insulating layer comprises a light absorbing layer comprising a resin in which a pigment or a carbon-based material is contained, and wherein an upper surface of said pixel electrode is substantially flush with an upper surface of said light absorbing insulating material.

2. (previously presented) A display device comprising a pixel matrix circuit constituted by a plurality of pixels each including at least one TFT and a pixel electrode connected to the TFT, wherein the pixel electrode includes a lamination structure of a first metal layer and a second metal layer; wherein the first metal layer is in contact with the second metal layer, an insulating layer is put between the first metal layer and the second metal layer at a contact portion where the first metal layer is connected with the TFT, and

wherein the insulating layer comprises a light absorbing layer comprising a resin in which a pigment or a carbon-based material is contained.

3. (previously presented) A display device comprising a pixel matrix circuit comprising:

a TFT;

a first insulating layer over the TFT, wherein the first insulating layer comprises a contact hole;

a first conductive film over the first insulating film and in the contact hole, wherein the first conductive film is electrically connected to the TFT through the contact hole;

a second insulating layer filled in the contact hole, wherein an upper surface of the first conductive film outside the contact hole is not covered by the second insulating layer;

a second conductive film on and in contact with the upper surface of the first conductive film and the second insulating layer,

wherein the second insulating layer comprises a light absorbing layer comprising a resin in which a pigment or a carbon-based material is contained.

4. (previously presented) A display device according to claim 2, wherein at least one of the first and the second metal layer has a single layer structure or a lamination structure.

5. (previously presented) A display device according to claim 2, wherein the first metal layer is made of a material selected from the group consisting of Ti, Cr, Ta, W, Mo, Nb and Si,

and the second metal layer is made of a material selected from the group consisting of Al, Cu, Ag, and metal films mainly containing those elements.

6. (previously presented) A display device according to any one of claim 1 wherein the insulating layer is an organic resin film of at least one material selected from the group consisting of polyimide, polyamide, polyimide amide, and acryl.

7. (Canceled)

8. (previously presented) An electronic equipment comprising a display device according to claim 1 as a display.

9-15. (Canceled)

16. (currently amended) An electronic device having at least one active matrix type liquid crystal panel, said liquid crystal panel comprising:

a substrate having an insulating surface;

an active matrix circuit formed over said substrate comprising a plurality of pixel electrodes, a plurality of switching elements for switching said pixel electrodes, respectively, an interlayer insulating film formed over said plurality of switching elements wherein each of said plurality of pixel electrodes is formed on said interlayer insulating film and electrically connected to the respective switching element through a contact hole of said interlayer insulating film; and

a driving circuit comprising a plurality of thin film transistors formed over said substrate for driving said active matrix circuit,

wherein a depression of said pixel electrode formed over said contact hole is filled with a light absorbing insulating material,

wherein the light absorbing insulating material comprises a resin in which a pigment or a carbon-based material is contained, and

wherein an upper surface of said pixel electrode is substantially flush with an upper surface of said light absorbing insulating material.

17. (previously presented) An electronic device according to claim 16,

wherein each of said pixel electrodes comprises:

a first conductive layer which is formed on the interlayer insulating film and extends into said contact hole and electrically contacts the corresponding switching element; and

a second conductive layer which is formed on and in contact with the first conductive layer.

18. (original) An electronic device according to claim 16 wherein each of said switching elements comprises a multi-gate transistor in which a plurality of thin film transistors are connected to the corresponding pixel electrode in series.

19. (original) An electronic device according to claim 16 wherein each of said switching elements comprises at least one thin film transistor having an LDD structure.

20. (original) An electronic device according to claim 17 wherein said first conductive layer comprises a material selected from the group consisting of Ti, Cr, Ta, W, Mo, Nb and Si.

21. (original) An electronic device according to claim 17 wherein said second conductive layer comprises a material selected from the group consisting of Al, Cu and Ag.

22. (original) An electronic device according to claim 16 wherein said interlayer insulating film comprises an organic resin.

23. (original) An electronic device according to claim 16 wherein said device is a portable telephone.

24. (original) An electronic device according to claim 16 wherein said device is a video camera.

25. (original) An electronic device according to claim 16 wherein said device is a mobile computer.

26. (original) An electronic device according to claim 16 wherein said device is a rear projector.

27. (original) An electronic device according to claim 16 wherein said device is a front projector

28. (previously presented) A display device according to claim 3, wherein at least one of the first and the second metal layer has a single layer structure or a lamination structure.

29. (previously presented) A display device according to claim 3, wherein the first metal layer is made of a material selected from the group consisting of Ti, Cr, Ta, W, Mo, Nb, and Si, and the second metal layer is made of a material selected from the group consisting of Al, Cu, Ag, and metal films mainly containing those elements.

30. (previously presented) A display device according to claim 2, wherein the insulating layer is an organic resin film of at least one material selected from the group consisting of polyimide, polyamide, polyimide amide, and acryl.

31. (previously presented) A display device according to claim 3, wherein the insulating layer is an organic resin film of at least one material selected from the group consisting of polyamide, polyamide, polyimide amide, and acryl.

32-33. (Canceled)

34. (previously presented) An electronic equipment comprising a display device according to claim 2, as a display.

35. (previously presented) An electronic equipment comprising a display device according to claim 3, as a display.

36-41. (Canceled)

42. (currently amended) An electronic device having at least one active matrix type display device comprising:

at least one switching element;

at least one interlayer insulating film formed over said switching element;

a pixel electrode formed on said interlayer insulating film and electrically connected to said switching element through a contact hole of said interlayer insulating film;

a light absorbing insulating material formed in a depression of said pixel electrode over said contact hole,

wherein the light absorbing insulating material comprises a resin in which a pigment or a carbon-based material is contained, and

wherein an upper surface of said pixel electrode is substantially flush with an upper surface of said light absorbing insulating material.

43. (previously presented) The electronic device according to claim 42 wherein an upper surface of said pixel electrode is substantially flush with said light absorbing insulating material.

44. (previously presented) The electronic device according to claim 42 wherein said switching element is a thin film transistor.

45. (previously presented) The electronic device according to claim 42 wherein said switching element is a MOSFET.

46-47. (Canceled)

48. (currently amended) An electronic device having at least one active matrix type display device comprising:

at least one switching element;

at least one interlayer insulating film formed over said switching element;

a pixel electrode formed on said interlayer insulating film and electrically connected to said switching element through a contact hole of said interlayer insulating film;

a light absorbing insulating material formed in a depression of said pixel electrode over said contact hole,

wherein said insulating material is a light absorbing material comprising a resin in which a pigment or a carbon-based material is contained, and

wherein an upper surface of said pixel electrode is substantially flush with an upper surface of said light absorbing insulating material.

49. (previously presented) The electronic device according to claim 48 wherein an upper surface of said pixel electrode is substantially flush with said light absorbing insulating material.

50. (previously presented) The electronic device according to claim 48 wherein said switching element is a thin film transistor.

51. (previously presented) The electronic device according to claim 48 wherein said switching element is a MOSFET.

52. (previously presented) The electronic device according to claim 48 further comprising a conductive layer formed on said pixel electrode and said insulating material.

53. (previously presented) The electronic device according to claim 42 further comprising a conductive layer formed on said pixel electrode and said light absorbing insulating material.

54. (previously presented) The electronic device according to claim 42 wherein said interlayer insulating film comprises an organic resin.

55. (previously presented) An electronic device according to claim 42 wherein said device is a portable telephone.

56. (previously presented) An electronic device according to claim 42 wherein said device is a video camera.

57. (previously presented) An electronic device according to claim 42 wherein said device is a mobile computer.

58. (previously presented) An electronic device according to claim 42 wherein said device is a rear projector.

59. (previously presented) An electronic device according to claim 42 wherein said device is a front projector

60. (previously presented) The electronic device according to claim 48 wherein said interlayer insulating film comprises an organic resin.

61. (previously presented) An electronic device according to claim 48 wherein said device is a portable telephone.

62. (previously presented) An electronic device according to claim 48 wherein said device is a video camera.

63. (previously presented) An electronic device according to claim 48 wherein said device is a mobile computer.

64. (previously presented) An electronic device according to claim 48 wherein said device is a rear projector.

65. (previously presented) An electronic device according to claim 48 wherein said device is a front projector

66. (previously presented) A display device according to claim 1 wherein said device is a portable telephone.

67. (previously presented) A display device according to claim 1 wherein said device is a video camera.

68. (previously presented) A display device according to claim 1 wherein said device is a mobile computer.

69. (previously presented) A display device according to claim 1 wherein said device is a rear projector.

70. (previously presented) A display device according to claim 1 wherein said device is a front projector

71. (previously presented) A display device according to claim 2 wherein said device is a portable telephone.

72. (previously presented) A display device according to claim 2 wherein said device is a video camera.

73. (previously presented) A display device according to claim 2 wherein said device is a mobile computer.

74. (previously presented) A display device according to claim 2 wherein said device is a rear projector.

75. (previously presented) A display device according to claim 2 wherein said device is a front projector

76. (previously presented) A display device according to claim 3 wherein said device is a portable telephone.

77. (previously presented) A display device according to claim 3 wherein said device is a video camera.

78. (previously presented) A display device according to claim 3 wherein said device is a mobile computer.

79. (previously presented) A display device according to claim 3 wherein said device is a rear projector.

80. (previously presented) A display device according to claim 3 wherein said device is a front projector

81. (previously presented) A display device according to claim 3, wherein the first conductive film is electrically connected to the TFT through one of a source electrode and a drain electrode thereof.